

Exploring the Pedagogical Needs of English of Engineering Students

Priyanka Jain

Research Scholar

GLA University, Mathura 281406 Uttar Pradesh

priyankajainkavi@gmail.com

=====

Introduction

The twenty first century has transported new innovative teaching methodologies to make teaching student centric. There was a time when the process of learning a language destined understanding a large number of highly multifarious grammatical rules. The growing interest in communicative rather than linguistic competence, and in communicative performance ensured many theories of language learning. In these theories consequently, there has been a switch of emphasis from content" which normally meant grammar and lexis, to "objectives". These objectives are generally based on the needs of the learner. Van Ek (1976) explains the situation by saying that language learning objectives must be geared towards learners' needs, and that they should specify the following components:

1. The situations in which the foreign language will be used, including the topics to be dealt with;
2. The language activities in which the learner will engage;
3. The language functions which the learner will fulfil;
4. What the learner will be able to do with respect to each topic;
5. The general notions which the learner will be able to handle;
6. The specific notions which the learner will be able to handle;
7. The language forms which the learner will be able to use;
8. The degree of skill with which the learner will be able to perform.

Language learners need languages for professional and work related purposes. This has given considerable space to ESP which plays a major role in providing need based English teaching programmes. It focuses mainly on the questions tangled in scheming languages teaching programmes.

Definition and Characteristics of ESP

The term ESP stands for English for specific purposes. It is a field of linguistic study that addresses the immediate and very specific needs of students for a target language required for academic or professional purposes. It is a subdivision of the language for specific purposes

=====

(LSP), which is defined as "... the area of investigation and practice in the development of language programs for people who need a language to meet a foreseeable range of needs. communicative ". Therefore, communicative competence is a very significant issue in ESP. ESP has a number of features that differ from general English. Dudley-Evans and St. John offered a modified definition of absolute and variable characteristics of ESP:

I. ***Absolute characteristics***

- ESP is defined to meet the specific needs of the student;
- ESP uses the underlying methodology and the activities of the discipline it serves;
- ESP focuses on the language (grammar, lexicon, register), skills, speech and genres appropriate for these activities.

II. ***Variable features***

- ESP can be related or designed for specific disciplines;
- ESP can use, in specific teaching situations, a methodology different from that of general English;
- ESP is likely to be designed for adult students, in a tertiary level institution or in a professional work situation. It could, however, be for secondary school students;
- ESP is generally designed for intermediate or advanced level students;
- Most ESP courses require some basic knowledge of the language system but can be used with beginners.

Hence, a number of terms and phrases are very important for ESP. These are specific needs, language skills, designed for specific disciplines and designed for adult students. Consequently, Hutchinson and Waters argue that what sets ESP apart from general English is awareness of necessity. Once again Robinson notes that "ESP arose for the first time and continued to develop, in response to a need: the need for non-native speakers to use it for a clearly defined practical purpose. When goals change, ESP too "[6]. Although Robinson's definition is almost similar to that of Hutchinson and Waters, it clearly states that the need for language in ESP is particularly concerned with non-native speakers. However, the most concise and meaningful definition of ESP is perhaps provided by van Naerssen, Brinton and Kuzetnova. They note that the basics of ESP are; needs-oriented, specific and pertinent.

There are two main areas of ESP. English for Academic Purposes (EAP) which prepares students to study in foreign universities. It is English for Professional Purposes (PPE) which prepares students for a particular profession. He has covered topics ranging from engineering, law, medicine or computer science, to tourism and business management.

The Business English course has the following objectives

Language in India www.languageinindia.com ISSN 1930-2940 20:5 May 2020

Priyanka Jain, Research Scholar

Exploring the Pedagogical Needs of English of Engineering Students

126

- Prepare students to handle various written communications such as reports, letters etc.
- To take notes or summarize documents, organize meetings, prepare agenda, draft resolutions, writing meeting minutes, making oral presentations,
- Know the managerial communication techniques for information sharing, presentation and participation in meetings, interviews and negotiations.
- Each college should provide a well-equipped language laboratory. Students are expected to practice listening, speaking and writing skills in practical or laboratory lessons.
- Some tasks / assignments are suggested to be taken into consideration in practical lessons.

Some ESP teachers may feel intimidated by the prospect of teaching English Engineering. This is generally due to the fact that they will be exposed to their possible lack of engineering experience or knowledge and consequently feel inadequate. The role of the teacher in this case is not to present engineering concepts to students or to instruct them in the field of engineering. On the contrary, it is to allow these students to develop their language skills in an engineering context. English engineering teachers are first.

Professional Requirements. The rapidly changing technology demands more and more science oriented engineers. For engineers, English is primarily a library language meaning that the student must understand enough to gain access to knowledge contained in textbooks and particularly in periodicals and journals in order to extract information and keep abreast with latest technologies. The second most important part English plays for engineers or engineering students is its position as an international language of conferences, symposia, and seminars, which means that they need to be able to understand specialized spoken language. Active participation in these meetings, however, also demands an ability to communicate with colleagues, participants etc. As well as skill in the specialized language of engineering this also demands knowledge of everyday language. The professional requirement to comprehend the written word concerns virtually all engineers. The proportion of engineers who go to study or practice in English-speaking countries is even smaller, so at university level we concentrate on teaching to engineering students the skills needed to speak everyday English and more specialized engineering English as well as the skills needed for writing.

English for Engineers

Previous research in the field of engineering studies shows that English language is of paramount importance in the academic and professional lives of engineering students (Basturkman, 1998; Pendergrass et al., 2001; Reimer, 2002; Pritchard & Nasr, 2004; Joesba & Ardeo, 2005; Sidek et al., 2006; Hui, 2007; Venkatraman & Prema, 2007, Rayan, 2008).

Pendergrass et al. (2001) pointed out that English is an essential tool in engineering education, and therefore "integrating English into engineering, science and math courses is an effective way to improve the performance of engineering students in oral and written communication".

Pritchard & Nasr (2004, p. 426) emphasized that "English is of particular importance for engineering and science students because it is the principal international language of science and is looked upon as an effective means for enabling those students to become familiar with professional texts written in English".

Joesba & Ardeo (2005) stated that as English has become the de facto international language of science and technology, engineering students have to face this fact while they are students, since books, papers, handbooks, journals, etc. written in English are included in their reading lists. A study conducted on language needs of undergraduate students from different disciplines, including natural sciences, engineering, medical sciences, economics, administrative sciences, and arts and humanities by Zoghoul & Hussein (1985) in Jordan revealed the need of extensive use of English in both academic and professional settings. The ability to communicate in various forms includes written, oral, audio-visual and graphic presentations along with written business proposals for board room presentations.

Another study had been conducted by Atai (2008) on the academic language needs of Computer Science Engineering students of Iran based on English for Specific Academic Purposes (ESAP) programs. The participants agreed that 'written skills' and 'language components' are important for undergraduate learners of Computer Science engineering. The undergraduates perceived some difficulties with some sub-skills of reading, writing, speaking, listening, using general bilingual dictionaries, and translating subject-specific texts from Persian to English. Moreover, the General English Proficiency (GEP) level of the majority of the engineering students tested proved to be rather low.

Thus English for engineering purposes is a course designed for potential engineers who would need to use the language to communicate with colleagues or clients. It aims at developing students' communication skills in English so they can more effectively contribute to meetings, discuss technical drawings and production methods, give presentations and deal with phone calls in English.

The paper reports the qualitative and quantitative findings of the research with regard to the students of Engineering motivation for studying English, along with related attitudes toward English, English instruction. Furthermore, it also presents the findings pertaining to the

participants' future expectations of studying English. The findings in each section are broken up into five major categories:

1. Motivation for studying English
2. Attitudes toward studying English
3. Attitudes toward English instruction
4. Attitudes toward English speakers
5. Future expectations

Qualitative Results

This section presents the findings with regard to the students' motivations and attitude derived from the interview data. There are several subcategories which were presented under each one of the main categories.

This means that under each category, a cluster of patterns are represented in a form of matrix. Each matrix illustrates the frequency of recurrent patterns. The matrices summarize the meaning and experiences, feelings and interpretations pertaining to the participants' motivations and attitudes. That is to say, each matrix allows contrast of findings according to class and gender of participating groups. Initially, a comparison of personal and background information is presented, as derived from the background survey and presented in Tables. The participants groups consist of Upper Middle Class (UMC), Middle Class (MC), and Economically underprivileged (EU).

Motivation for Studying English

At this point, researcher found out in both cases some excerpts were cited in support of the findings.

The participants of EU group reiterated that they had no option but to take English. They mentioned that it was imposed on them as it is the part of their curriculum. However, some of the participants from UMC and MC had noticed the significance of learning English a Second Language for instance. They responded that English has been encouraged by their parents or families and sponsors. They also indicated that English was mandatory and was not alternative. That is to say, when we asked about the reasons the participants had for studying English, responses were similar. The participants understood the reasons why English was part of the curriculum. Apart from the fact that the participants had to take English, they pointed that English is an international language which is very important for their education and future job prospects.

The following are some excerpts from the participants' (P) discussions of their motivations for learning and studying English:

P1 (EU): English was part of the curriculum, that's why we had to study it.

P2 (EU): it was required to study English....

P3 (MC): first of all... I have to learn and study English... it was not alternative... and secondly, in order to get better job... you have to speak English... which is used as an international language.

P4 (UMC): I would say that it was compulsory to study English at school but then I had my own plans for studying English. First of all I was planning to study engineering or medical school. So, to go to their school you know you have to be good in English... and I had my plans for higher education.

P 5 (MC): I think that it would play a crucial role in my future and my education... as I expected to do any secondary or graduate education in English.

P 6 (UMC): I like to study abroad, and I like to study in the United Kingdom... English was also required in the beginning.

P 7 (MC) : I studied English because of necessity... and since it was the international language of the world and I had to speak and communicate in the English language well to be able to find job easily... and it was also part of the school curriculum.

The participants' realization of the significance of studying English for their future education and professional development was influenced by many factors. Some of these students were self-motivated and others were encouraged by their parents or families, their teachers, relatives and friends. Some students spoke of parental encouragement and took their advice to meet their expectations.

P 7: I believe the big part was due to my father... he always encouraged us to study English.

P. 6: my mother... she wants to see her sons and daughters educated

As shown above there are similarities and differences in motivation among individuals and among groups. Approximately, all participants indicated that meeting the school requirement was their motivation. Four participants mentioned that their motivation was academic success. Six of the participants wanted to continue their education and thus felt they had to excel in English. Three of the participants were motivated by their desire to study out of their countries. Nine of the participants were motivated to study English to meet their parental expectations and thus were encouraged by them and their parents and families. Three of the participants realized it would be interesting and helpful in obtaining a job someday. Four of the participants were motivated by ample opportunity English might bring for them. Four of the participants were encouraged by their sponsors to continue the study of English in pursuit of higher education.

Four of the participants indicated that the Universality of English was the driving force for them to study it.

Table 1
Participants' motivation to learn English

S. No	Motivation	EU		MC		UMC		Total
		M	F	M	F	M	F	
1	Meeting academic requirement	4	2	4	2	1	3	18
2	Academic success	1	-	2	-	-	2	5
3	Continue education	2	-	2	-	-	-	6
4	Desire to study abroad	-	1	1	-	-	-	3
5	Fulfill parental expectations	2	-	3	-	-	-	5
6	Family encouragement	-	2	2	1	-	2	8
7	Getting a job	-	-	-	-	-	2	2
8	To communicate well	1	-	-	-	-	1	3
9	Sponsors Recommendation	1	-	-	-	-	3	4
10	Importance of English As an international language	-	1	1	-	-	1	5

It can be seen from the table above that the participants have an instrumental motivation for studying English as a second language. The participants have utilitarian aims to be achieved from studying English. The instrumental motivation revealed in the analysis is either educational (continue education; academic success; desire to study of the countries), professional (more opportunity; obtaining better job and future), or a result of parents or family pressure (fulfill parental expectations, parents and family encouragement).

This means that the reasons cited are related to the practical value if English in the educational and professional life of the participants. These practical reasons are: (1) completing a degree; (2) academic success; (3) continue graduate studies; (4) getting better work (5) obtaining work or job in Foreign countries.

However, the other reasons revealed are: (1) to communicate with the people around them

This is likely to stem from the participants' conscious efforts to communicate better in English for instance, English speaking environment as a necessity to fulfill their practical aims and to communicate with foreigners.

Conclusion

This study aimed to investigate the Engineering students' motivation and attitude toward learning the English language.

In the first situation, the motivations and along with attitudes toward the study of English are colored in terms of socio-cultural characteristics of each group. Motivations and related attitude toward the English language were governed by different sources of determiners.

Nonetheless, despite the students' exposure to modern political and social tend, motivations and attitudes continue to be tempered by the economic and cultural values most relevant to them.

Gardner (1991) confirmed that that linguistic background of the parents can play a crucial role in the motivation and attitudes of their children. This is truth to be found among the Engineering University students studying English. Some of the participants pointed that their parents played a crucial role in their motivation to learn English as they used to teach them English words and were a source of encouragement.

Moreover, this study contributes to the enrichment and development of English for Special Purpose (ESP).

That is to say, that English should be taught in a meaningful way, in the way it is used by its speakers since most cultural notions are reflected in a real language use rather than in formal instruction.

The second one is, this investigation appeals to curriculum designers to promote effective teaching on English language. In other words, this recommendation rests on the students' demands and needs assessment. This means that the curriculum content should be revised in terms of the orientation of the students in a compatible way to achieve the balance between the objectives of the English courses and the needs of the students. There is a continuing debate about how to promote ESP instruction in the Engineering educational system. I believe that there is a further need to investigate and interpret the attitudinal and motivational factors which affect the acquisition of English by learners. These factors play a crucial role in second language achievement.

In addition, this study recommends that English courses should be designed to assist Engineering students to achieve their objectives by focusing on the content while not underestimating proficiency in the English language to make them able to interact freely in the society.

References

1. Arani, J. (2004). Issues of learning EMP at University: An analysis of students' perspective. Karan's linguistics issues. (Online) Retrieved 11 August, 2009 from <http://www3.telus.net/linguisticsissues/sempr>
2. Askes, H. (1988). Second language teaching today. Techniques and activities Good wood: Via Africa Limited.
3. Baker, C. Attitude and language (Great Britain: Multilingual Matters Ltd, (1992).
4. Brown, H. (2000). Principles of language learning and teaching. New Jersey: Prentice Hall.
5. Crookes, Graham, & Schmidt, Richard. (1991). Motivation: Reopening the research agenda. *Language learning*, 41, 469-512.
6. Csizer, K. and Dornyel, Z. 'The internal in structure of language learning motivation and its relationship with language choice and learning effort', the modern language Journal, 89, I, (2005), pp. 19-36.
7. Dubois, C. A. (1956). Foreign students and higher education in the United States. Washington, D.C: American Council on Education.
8. Ehraman, M. E, & Oxford, R. L., (2003). A brief overview of individual differences in second language learning acquisition. *Systems*, 31, 313-330.
9. Ellis, R (1985). Understanding language acquisition (Oxford: O. U. P.)
10. Fishman, J., Cooper, R. L, & Conrad, A. W. (1977). The spread of English. Rowley, MA: Newbury House.
11. Gardner, R. C. (1982 a). Language attitudes and language learning. In E. B. Ryan & H. Giles (Eds.), Attitudes towards language variation (pp. 132-147). London, U.K: Edward Arnold.
12. Gardner, R. C. (1982 b). Social psychology and second language learning; the role of attitudes and motivation. London: Edward Arnold Ltd.
13. Krashen, Stephen, & Terrell, T. (1983). The Natural approach. Hayward, CA: The Alemany Press.
14. Lambert, W. E, & Taylor, D. M. (1990). Coping with cultural and racial diversity in urban American. New York: Praeger.
15. Mackay, R. & Mounlford, A. (Eds). (1978). English for specific purposes. London; Longman.

16. Spolsky, Bernard. (1969). Altitudinal Aspects of second language learning. *Language learning*, 19, 271-283.
17. Starr, S. Frederick. (1991). Colleges can help America overcome its ignorance of Arab la
18. Tellis, W. (1997). Application of a case study methodology. *The qualitative report*, 3 (3). (Online) Retrieved 11 August, 2009 from <http://www.nova.edu/ssss/QRQ33/Tellis2.html>
19. Wilkins, D. A. (1978). *Second language learning and teaching*. London: Edward and Arnold.
20. Wolcott, H. F. (1992). Posturing in qualitative inquiry. In LeCompte, M. D., Millroy, W. L., & J. Preissle (Eds.), *the handbook of qualitative research in education* (pp. 3-52). San Diego: Academic Press, Inc.
21. Wood, Peter. (1992). Symbolic interactionism: Theory and method, in LeCompte, M. D., Millroy, W. L., & J. Preissle (Eds.), *the handbook of qualitative research in education* (pp. 338-404). San Diego: Academic Press, Inc.
22. Yorkey, R. (1977). Practical EFL techniques for teaching Arabic students, In Alatis & Crymes (eds.), *The human factors in EFL: A series of six lectures*. (pp. 57-85). Washington, D. C: TESOL.
23. Young, D. (1987). *Bridging the gap between theory and practice in English second language teaching*. Cape Town: Maskew Miller Longman.

Corresponding Address

Priyanka Jain

A-4, 5/194, Jawahar Nagar
Opp. Durga Madir, G.T. Road,
Aligarh – 202001 (U.P.) India
priyankajainkavi@gmail.com
M. 9760789200